

IN THE CLAIMS:

Please write the claims to read as follows:

Please cancel claims 1-21 without prejudice.

1 1-21. (Canceled)

Please add new claims 22 *et seq.*:

1 22. (New) A method for use in an operator initiated graceful takeover in a computer
2 cluster having a first and second computer, the method comprising the steps of:
3 receiving, at the second computer, an indication that the operator has requested
4 that the second computer take over for the first computer;
5 requesting, from the second computer, that the first computer shut down;
6 completing service requests at the first computer pending at the time the first
7 computer was requested to shut down;
8 transferring responsibilities of the first computer to the second computer; and
9 shutting down the first computer.

1 23. (New) The method as in claim 22, further comprising:

2 generating the indication as an operator request from within the first computer;
3 and
4 sending the indication from the first computer to the second computer.

1 24. (New) The method as in claim 22, further comprising: generating the indication as
2 an operator request from within the second computer.

- 1 25. (New) The method as in claim 22, further comprising: refusing further service re-
- 2 quests at the first computer after the first computer was requested to shut down.

- 1 26. (New) The method as in claim 22, further comprising: transferring access of a stor-
- 2 age device for the first computer to the second computer.

- 1 27. (New) The method as in claim 22, further comprising: asserting, at the second com-
- 2 puter, disk reservations of disks of the first computer.

- 1 28. (New) The method as in claim 22, further comprising: rerouting file service requests
- 2 from the first computer to the second computer.

- 1 29. (New) The method as in claim 22, further comprising: activating, at the second
- 2 computer, network interfaces and network addresses that replicate those of the first com-
- 3 puter.

- 1 30. (New) The method as in claim 22, further comprising: initiating a countdown timer
- 2 subsequent to the shut down request from the second computer.

- 1 31. (New) The method as in claim 30, further comprising: forcing the first computer to
- 2 shut down in the event the first computer is still operating at the expiration of the count-
- 3 down timer.

- 1 32. (New) The method as in claim 22, further comprising: detecting, at the second com-
- 2 puter, the shut down of the first computer by the absence of a periodic heartbeat signal.

- 1 33. (New) The method as in claim 22, further comprising: storing, at the first computer,
- 2 state information of the first computer prior to shutting down.

- 1 34. (New) The method as in claim 22, further comprising: sending periodic requests
- 2 from the second computer to the first computer to remain shut down, after the first com-
- 3 puter has shut down.

- 1 35. (New) The method as in claim 22, further comprising: requesting, from the first
- 2 computer, that the second computer restore responsibilities of the first computer to the
- 3 first computer.

- 1 36. (New) The method as in claim 22, further comprising: restoring responsibilities of
- 2 the first computer to the first computer upon restart of the first computer.

- 1 37. (New) The method as in claim 22, further comprising: using the first and second
- 2 computers as a file servers.

- 1 38. (New) A storage system capable of performing an operator initiated graceful take-
- 2 over, the storage system comprising:
 - 3 a first computer; and
 - 4 a second computer having a processor to

5 i) receive an indication that the operator has requested that the second
6 computer take over for the first computer,
7 ii) request that the first computer shut down,
8 iii) allow the first computer to complete service requests pending at the
9 time the first computer was requested to shut down,
10 iv) take over any responsibilities of the first computer, and
11 v) allow the first computer to shut down.

1 39. (New) The storage system as in claim 38, further comprising: a processor for the
2 first computer to i) generate the indication as an operator request, and ii) send the indica-
3 tion to the second computer.

1 40. (New) The storage system as in claim 38, further comprising: the processor of the
2 second computer to generate the indication as an operator request.

1 41. (New) The storage system as in claim 38, further comprising: a processor for the
2 first computer to refuse further service requests at the first computer after the first com-
3 puter was requested to shut down.

1 42. (New) The storage system as in claim 38, further comprising:
2 a storage device for the first computer; and
3 an interconnect to transfer access of the storage device for the first computer to
4 the second computer.

- 1 43. (New) The storage system as in claim 38, further comprising: disks of the first com-
- 2 puter, the disks to be reserved by the second computer while the first computer is shut
- 3 down.

- 1 44. (New) The storage system as in claim 38, further comprising: an interconnect to re-
- 2 route file service requests from the first computer to the second computer.

- 1 45. (New) The storage system as in claim 38, further comprising:
 - 2 network interfaces at the first computer;
 - 3 network addresses at the first computer;
 - 4 network interfaces at the second computer that replicate the network interfaces of
 - 5 the first computer; and
 - 6 network addresses at the second computer that replicate the network interfaces of
 - 7 the first computer, the network interfaces and addresses at the second computer that rep-
 - 8 licate the network interfaces and addresses of the first computer to be activated by the
 - 9 second computer while the first computer is shut down.

- 1 46. (New) The storage system as in claim 38, further comprising: a countdown timer,
- 2 the countdown timer to be initiated subsequent to the shut down request from the second
- 3 computer.

- 1 47. (New) The storage system as in claim 46, further comprising: an interconnect to
- 2 force the first computer to shut down in the event the first computer is still operating at
- 3 the expiration of the countdown timer.

- 1 48. (New) The storage system as in claim 38, further comprising: an interconnect at the
- 2 second computer to detect the shut down of the first computer by the absence of a peri-
- 3 odic heartbeat signal.

- 1 49. (New) The storage system as in claim 38, further comprising: persistent memory at
- 2 the first computer to store state information of the first computer prior to shutting down.

- 1 50. (New) The storage system as in claim 38, further comprising: an interconnect at the
- 2 second computer to send periodic requests to the first computer to remain shut down, af-
- 3 ter the first computer has shut down.

- 1 51. (New) The storage system as in claim 38, further comprising: a processor for the
- 2 first computer to request that the second computer restore responsibilities of the first
- 3 computer to the first computer.

- 1 52. (New) The storage system as in claim 38, further comprising: an interconnect to re-
- 2 store responsibilities of the first computer to the first computer upon restart of the first
- 3 computer.

- 1 53. (New) The storage system as in claim 38, further comprising: the first and second
- 2 computers are file servers.

- 1 54. (New) A storage system capable of performing an operator initiated graceful take-
- 2 over, the storage system comprising:
- 3 a first computer;

4 a second computer;

5 means for receiving, at the second computer, an indication that the operator has

6 requested that the second computer take over for the first computer;

7 means for requesting, from the second computer, that the first computer shut

8 down;

9 means for completing service requests at the first computer pending at the time

10 the first computer was requested to shut down;

11 means for transferring responsibilities of the first computer to the second com-

12 puter; and

13 means for shutting down the first computer.

1 55. (New) A computer readable media, comprising: the computer readable media con-

2 taining instructions for execution in a processor for the method of,

3 receiving, at a second computer, an indication that an operator has requested that

4 the second computer take over for a first computer;

5 requesting, from the second computer, that the first computer shut down;

6 completing service requests at the first computer pending at the time the first

7 computer was requested to shut down;

8 transferring responsibilities of the first computer to the second computer; and

9 shutting down the first computer.

1 56. (New) Electromagnetic signals propagating on a computer network, comprising: the

2 electromagnetic signals carrying instructions for execution in a processor for the method

3 of,

4 receiving, at a second computer, an indication that an operator has requested that
5 the second computer take over for a first computer;
6 requesting, from the second computer, that the first computer shut down;
7 completing service requests at the first computer pending at the time the first
8 computer was requested to shut down;
9 transferring responsibilities of the first computer to the second computer; and
10 shutting down the first computer.